Federal Emergency Management Agency

Work in Progress

May/June 1999

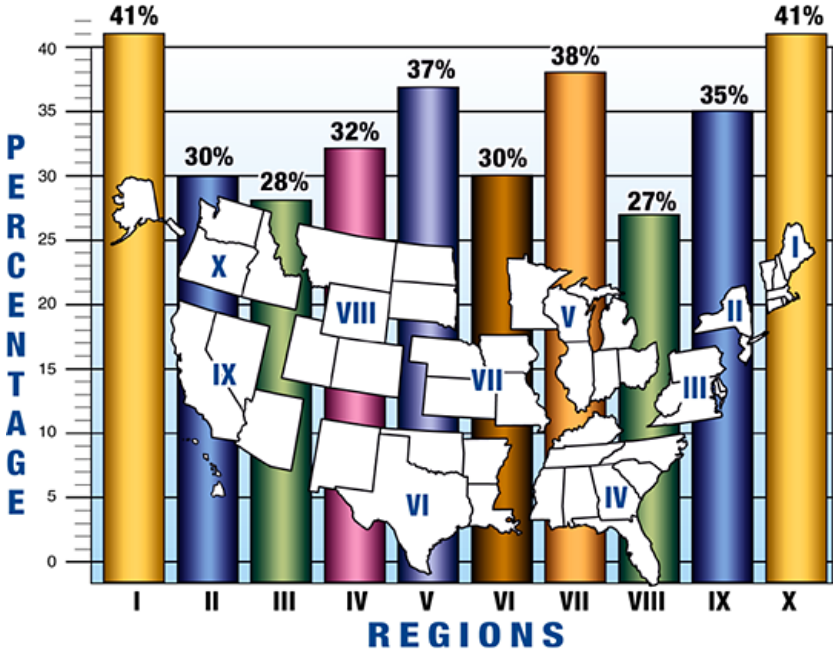
Modernizing FEMA's Flood Hazard Mapping Program

A Message From Mike Armstrong…

As the Regional Director for Region VIII from 1994 to 1997, I became keenly aware of the need to improve FEMA's flood hazard maps. When I was nominated to become the Associate Director for Mitigation and moved to Washington, D.C., I established flood hazard mapping as one of my top priorities. I was pleased to find that a Map Modernization Plan was already being worked on. Since then, much progress has been made, and, hopefully, funding will become available to fully implement the plan.

I am particularly excited about one element of the plan — the Cooperating Technical Communities (CTCs) program — a formalized collaboration among Federal, State and local agencies. This new program will recognize and encourage community participation in the mapping process and will facilitate local ownership of the flood hazard maps through greatly increased involvement in the mapping process. Partners may be individual communities or regional or State agencies responsible for flood hazard identification and/or floodplain management. Under the CTC program, these entities will enter into partnership agreements with FEMA to develop and/or maintain all or a component of their flood hazard maps.

*See "**Mike Armstrong's Message**," on page 10*



Percentage of communities responding to Five-Year Mapping Needs Assessment call for information.

Five-Year Mapping Needs Assessment Continues

As reported in earlier issues of *Work in Progress*, the Mitigation Directorate's Five-Year Mapping Needs Assessment Task Force has contacted all mapped communities that are participating in the National Flood Insurance Program (NFIP). Of the 17,570 communities contacted by the Task Force, 5,835 communities (approximately 33 percent) had responded by April 15, 1999. (See figure above for percentages of communities responding in each FEMA Region.)

MNUSS records updated

All of the mapping needs identified by the responding communities have been entered into FEMA's Mapping Needs Update Support System (MNUSS), an Oracle-driven database. The mapping needs are separated into two categories: Flood Data Update Needs (engineering update required) and Map Maintenance (changes to non-flood-hazard information shown on flood hazard map required). Responses from the contacted communities continue to reach FEMA daily, so the information stored in MNUSS is dynamic. MNUSS, as one of the tools that will assist FEMA in implementing its Map Modernization Plan, provides a comprehensive picture of mapping needs nationwide and will be used by FEMA staff in prioritizing future map updates.

*See "**Five-Year Mapping Needs**," on page 10*

Federal Emergency Management Agency
Work in Progress
May / June 1999
Modernizing FEMA's Flood Hazard Mapping Program

Inside This Issue:

mapmod@fema.gov

CHECK-RAS Released for Testing

FEMA has recently released a Beta test version of the CHECK-RAS program, developed in close coordination with the U.S. Army Corps of Engineers. The testers comprise a broad cross section of users, including engineers, and staff of Federal, state and local agencies. The CHECK-RAS program is designed to review HEC-RAS input and output data to ensure that the data are reasonable and do not contain obvious flaws. The program also verifies that the hydraulic estimates and assumptions made in preparing a given model are valid, considering the limitations of the HEC-RAS program and applicable FEMA requirements.

FEMA intends for CHECK-RAS to eventually be available in the public domain for use by study contractors, revision requesters, state and local agencies, FEMA regional offices and flood map production coordination contractors. The program will help improve the quality and accuracy of HEC-RAS modeling. CHECK-RAS, however, is not intended to replace engineering review and judgment. The program only flags areas of potential concern; the user must still determine if the flagged items are incorrect and make the appropriate adjustments to the models.

The CHECK-RAS program checks five different areas within the HEC-RAS modeling: roughness and transition loss coefficients, cross sections, structures, the floodway run and multiple profile runs. The program also:

- Provides a summary table and messages for each area of check.
- Assesses the suitability of roughness and transition loss coefficients.
- Assesses the suitability of starting water-surface elevations.
- Assesses bridges and culvert modeling.
- Provides a detailed floodway analysis.
- Compares important parameters among multiple profile runs.
- Proposes solutions through the use of Help screens.

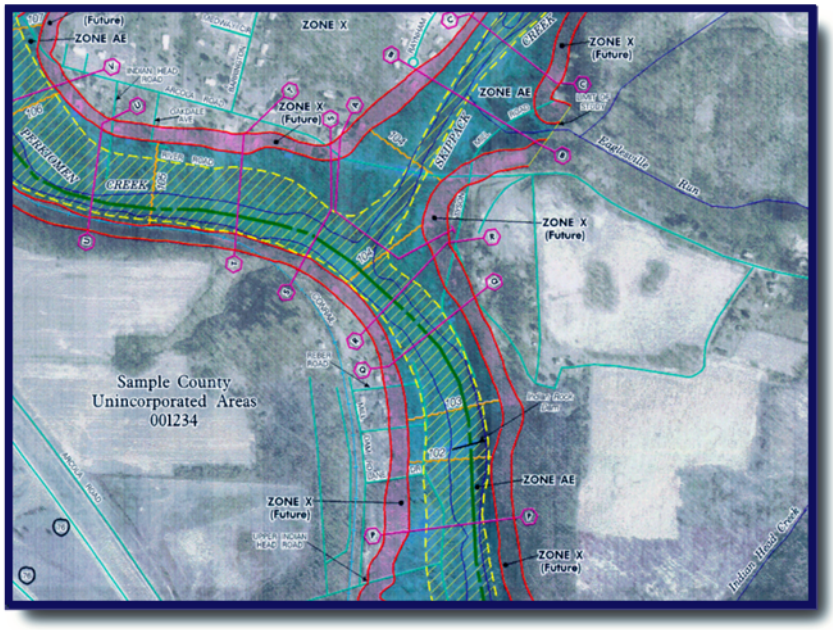
As soon as the Beta testing is complete and the program has been revised according to comments received from test users, FEMA will release the program for general use.

John Magnotti (john.magnotti@fema.gov) *is a Hydraulic Engineer in the Hazards Study Branch of the Technical Services Division.*

Taking a Look at Future-Conditions Hydrology

As part of Map Modernization Objective 8, FEMA's Technical Services Division is developing an approach for mapping floodplains based on future-conditions hydrology. Toward achieving that goal, we have prepared a draft report titled *Modernizing FEMA's Flood Hazard Mapping Program: Recommendations for Using Future-Conditions Hydrology for the National Flood Insurance Program*.

Historically, flood risk information presented on National Flood Insurance Program (NFIP) maps has been based on the existing conditions of the floodplain and watershed. However, flood hazards may change significantly, especially in areas experiencing urban growth or other changes in the watershed's physical conditions.



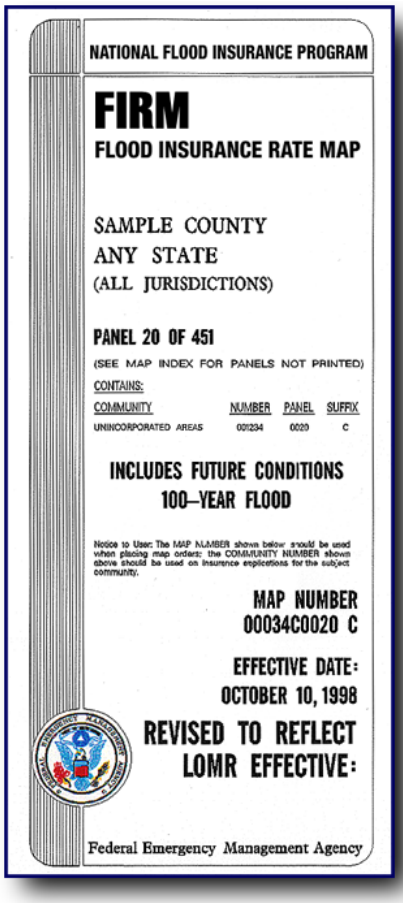
One of the recommendations in the draft report on mapping future-conditions hydrology is to show the future-conditions 100-year floodplain on the FIRMs.

Many communities experiencing urban growth already regulate construction based on future development in the watershed, but others may be hesitant to enforce more restrictive standards without Federal support. The multiple benefits and constraints of mapping floodplains based on future-conditions hydrology must be considered in evaluating present mapping policies. The draft report defines future-conditions hydrology as the flood discharges that would occur if conditions shown on the current land-use maps for a community were realized.

The draft report analyzes the pros and cons of mapping future-conditions hydrology and presents mapping recommendations. It was distributed to more than 30 reviewers in December 1998 and was subject to further review and discussion at a meeting/teleconference held in March. Recommendations presented in the report include:

- When a community requests to do so, showing the future-conditions 1-percent-annual-chance floodplain (100-year) on Flood Insurance Rate Maps (FIRMs) in lieu of the 0.2-percent-annual-chance (500-year) floodplain in a specially designated area. Federal flood insurance requirements would not apply in these areas. The 0.2-percent-annual-chance flood data would still be available on the flood profiles contained in the Flood Insurance Study.
- When a community requests to do so, displaying future-conditions hydrology on FIRMs for informational purposes and placing the responsibility for determining future-conditions land-use and hydrology on local communities. This takes advantage of the benefits of displaying future-conditions data while minimizing its constraints.
- Continuing FEMA flood insurance requirements based on existing conditions data; however, regulation of development by local floodplain managers would be based on locally developed future-conditions data. Federal flood insurance requirements would still apply to structures shown in the existing conditions floodplain.

*See "**Future-Conditions Hydrology**," on page 9*


NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

SAMPLE COUNTY
ANY STATE
(ALL JURISDICTIONS)

PANEL 20 OF 451

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
UNINCORPORATED AREAS	001234	0020	C

INCLUDES FUTURE CONDITIONS 100–YEAR FLOOD

Notice to User: The MAP NUMBER shown below should be used when placing map orders; the COMMUNITY NUMBER shown above should be used on insurance applications for the subject community.

MAP NUMBER
00034C0020 C

EFFECTIVE DATE:
OCTOBER 10, 1998

REVISED TO REFLECT LOMR EFFECTIVE:

Federal Emergency Management Agency

LOMA 2000 Initial Phase Begins

FEMA's newly designed LOMA 2000 determination products are now being used for issuing determinations for Letters of Map Amendment (LOMAs), conditional LOMAs, Letters of Map Revision Based on Fill (LOMR-Fs), and conditional LOMR-Fs. FEMA began manually using these new products for LOMA determinations on March 1, 1999, and for LOMR-F determinations on March 15, 1999. Using the new products manually enables FEMA to determine possible inadequacies in order to modify the products in future versions. The automation phase of this effort is steadily progressing and will be completed in the coming months.

When the automation phase is complete, use of the new products will reduce turnaround times and FEMA's costs for processing the letters. The format will produce error-free determinations more consistently.

The overwhelming response from users of these new products has been very positive, thus enabling FEMA to maintain a customer service-oriented approach. As part of a continuing effort to improve customer service, the new documents are being developed so that determinations can eventually be placed on FEMA's Internet site and be easily retrieved by the end users of the product. Having the issued documents on FEMA's Internet site also will allow lenders, realtors and potential homebuyers to verify the validity of a given document.

Mark Crowell (mark.crowell@fema.gov) *is a Physical Scientist at FEMA's National Office.*

Important FEMA Telephone Numbers

For technical support for LOMAs, LOMR-Fs and LODRs	**1-877-336-2627 (FEMA MAP)**
For information about the NFIP's Preferred Risk Policy	**1-800-427-9662**
To order current FEMA publications	**1-800-480-2520**
Flood Insurance Information Hotline	**1-800-427-4661**
To order current FEMA floodplain maps	**1-800-358-9616**
FEMA's 24-hour FAX-on-demand system	**1-800-646-FEMA TDD:1-800-427-5593**

Members of the general public, as well as engineers, surveyors and representatives of local, state and Federal agencies may dial these numbers to obtain information about various subjects, such as flood insurance and map revisions/amendments. Callers may also use these numbers to obtain information packets and order FEMA publications and map products.

On the Bandwagon

The following organizations have formally expressed their support of FEMA's Flood Map Modernization Plan:

- ☑ American Congress of Surveying and Mapping
- ☑ American Society of Civil Engineers
- ☑ Association of State Floodplain Managers
- ☑ National Association of Flood and Stormwater Management Agencies
- ☑ National Emergency Management Association
- ☑ National League of Cities
- ☑ National Flood Determination Association
- ☑ National Lenders' Insurance Council
- ☑ Ohio River Basin Water Management Council
- ☑ State of Oregon
- ☑ Technical Mapping Advisory Council
- ☑ United States Geological Survey
- ☑ Western Governors' Association

"The Council is pleased to learn that an effort has begun within FEMA to modernize the mapping program by improving map accuracy and completeness, utility, production, public awareness, and customer service. Notable is the significant input being provided by state organizations, other federal agencies, and the private sector."

— **Charles Duritsa, Chairman of the Ohio River Basin Water Management Council,** in a letter dated January 13, 1999.

Pilot Cooperating Technical Community Activities for Fiscal Year 1999

The CTC program will foster greatly increased involvement in and ownership of the mapping process by local and state entities.

FEMA is implementing a new program to recognize and encourage community participation in the mapping process—the Cooperating Technical Communities (CTCs) program. This program will foster greatly increased involvement in and ownership of the mapping process by local and state entities. Partners may be individual communities or regional or state agencies responsible for flood hazard identification and/or floodplain management. Under the CTC program, these entities will enter into partnership agreements with FEMA to develop and/or maintain all or a component of its flood hazard maps.

Many communities or agencies are performing tasks to support NFIP flood hazard mapping, are performing flood hazard analyses, or possess data that FEMA can use for flood hazard mapping; thus, they can be recognized for their efforts and contributions through the CTC program. These locally-funded initiatives, if coordinated with FEMA, can greatly benefit FEMA's flood hazard mapping program. In addition, FEMA has $400,000 available ($40,000 per Region) for FEMA-funded cooperative agreement activities in Fiscal Year 1999. Depending on the mapping needs and available funding, FEMA may be able to provide a portion of this funding to a CTC partner to develop specific mapping products. The agreements for these FEMA-funded activities will require that the partner provide FEMA with a product, such as base maps, topographic data files, or hydrologic/hydraulic models.

FEMA is in the process of developing program guidance for Fiscal Year 1999 that will be available by May 31 on the Flood Hazard Mapping Web site.

ACTIVITY	PARTNER	DESCRIPTION
Refinement of Approximate Zone A boundaries	**Community/ Regional/ State Agency**	Appropriate for communities with significant Zone A areas that have moderate present or expected development and, thus, do not warrant a full detailed study. The CTC partner works with FEMA to develop analysis methodologies and refines the Zone A boundaries. Emphasis should be placed on automation techniques.
Hydrologic and Hydraulic modeling and floodplain mapping	**Community/ Regional/ State Agency**	The CTC partner performs the role of the study contractor using GIS-based or traditional H&H modeling. The floodplain mapping will be submitted in digital format.
Digital conversion	**Community/ Regional/ State Agency**	The CTC partner digitizes the effective FIRM into a DFIRM. No new H&H analyses are involved.
Re-delineation of floodplain using updated data	**Community/ Regional/ State Agency**	The CTC partner re-delineates the effective flood hazard information using updated topographic data. GIS is used, where available.
Analysis of Community Mapping Needs to support FEMA's Mapping Needs Update Support System (MNUSS)	**Regional or State Agency**	The CTC partner performs a detailed community-by-community investigation and assessment of every community's needs, including study/restudy and map maintenance needs. This includes unmapped communities.

Potential activities for the Fiscal Year 1999 pilot CTCs.

Mary Jean Pajak (mary.jean.pajak@fema.gov) *is a Hydraulic Engineer in the Technical Services Division.*

Bel Marquez (bel.marquez@fema.gov) *of FEMA's regional office in Atlanta, is manager of the Cooperating Technical Communities objective.*

Map Modernization Objectives

FEMA is embarking on a number of Map Modernization objectives for improving the NFIP and its map products. Following is a list of the objectives:

1. Develop and implement an outreach program to include:
   - Exhibit for conferences
   - Outreach to key constituencies
   - Updated briefing packet
   - Congressional outreach
   - ***Work in Progress*** Bulletin

   (Anne Flowers, anne.flowers@fema.gov)

2. Develop revised, minimum base map standards for hazard mapping and implement for all new hazard maps as soon as practicable, and not later than FY 1999. (John Gambel, john.gambel@fema.gov)

2.5 Complete assessment of advanced technologies for preparing topographic mapping and work maps required for the production of Flood Insurance Studies and Flood Insurance Rate Maps. Implement the technologies for study starts in FY 1999 by developing appropriate appendices to "FEMA 37, Guidelines and Specifications for Study Contractors," developing training module, and presenting to FEMA Regional and National office staff. (Karl Mohr, karl.mohr@fema.gov)

3. Develop flexible, prioritized spending plan for map modernization that maximizes alternative sources of funding. (Michael Buckley, mike.buckley@ fema.gov)

4. Develop product specifications for Digital Flood Insurance Rate Map 2.0 and 2.1 (for converting existing manual inventory of Flood Insurance Rate Maps to digital format, and for our new flagship digital multi-hazard map product, respectively) and implement no later than FY 1999. (Mary Jean Pajak, mary. jean.pajak @fema.gov; and Mike Grimm, michael.grimm @fema.gov)

5. Develop Cooperating Technical Communities program to support Project Impact. (Bel Marquez, bel.marquez @fema.gov)

6. Initiate pilot Cooperating Technical Communities Program. (Project Impact staff and regional staff)

7. Bring ongoing cooperative initiatives to a successful completion, including: Maryland (Anne Flowers and John Benn, john.benn@fema.gov); New York (Phil Myers, phil.myers@fema.gov; and Paul Weberg, paul.weberg@fema.gov); Georgia (Mary Jean Pajak and Bel Marquez); Midland, Texas (Alan Johnson, alan.johnson@fema.gov; and Region VI staff); and Boone County, Nebraska (Alan Johnson and Region VII staff).

8. Develop standards and procedures for mapping future condition hydrology. (Mike Grimm)

9. Develop architecture for the Technical Services Division's Web site. Design to address product distribution, dissemination of information regarding map status, receipt and response to appeals, archives, and other functions. Formulate management structure, cost, and personnel requirements for implementation. (John Magnotti, john.magnotti@fema.gov)

10. Establish partnership with the National Geodetic Survey (NGS) for assistance in establishing and disseminating geodetic data, such as linking elevation reference mark information on Flood Insurance Rate Maps to the NGS's Web page for geodetic data. (John Gambel)

11. Establish partnership with the U.S. Geological Survey for assistance in developing and maintaining suitable base maps and topographic data compatible with NFIP needs. This includes making Digital Ortho Quads as readily accessible and usable as base maps. (John Gambel)

12. Establish partnership and provide technical assistance to Fish and Wildlife Service resulting in the Service's improved mapping of Coastal Barrier Resources System (CBRS) areas. Specifically, encourage and assist the Service in producing digital, vector mapping suitable for direct incorporation as a thematic layer in Digital Flood Insurance Rate Maps as well as posting on the World Wide Web. Improve and extend mapping of CBRS-protected areas. (Frank Tsai, frank.tsai @fema.gov)

13. Establish standard operating procedures for making hazard verification part of recovery cycle after Presidentially declared disasters. (Doug Bellomo, doug.bellomo@fema.gov)

14. Bring the toll-free FEMA Map Assistance Center on line. (John Magnotti)

15. Complete work on the automatic Letter of Map Amendment tracking and letter-generation software, also known as LOMA 2000. (Mark Crowell, mark. crowell@fema.gov)

16. Lay the groundwork for delegation of authority for issuance of Letters of Map Amendment and Letters of Map Revision Based on Fill to community officials and the private sector. Meet with ASCE, ASFPM, ACSM, FMDA, and NAFSMA. (John Gambel)

17. Develop new study processes, i.e., redefine the Technical Evaluation Contractor/Study Contractor relationship and begin limited implementation in FY 1998, with at least one pilot in each territory. (Marty Frengs, martin.frengs@fema.gov)

18. Fully implement multi-year contracts and task ordered contracts for procuring Flood Insurance Studies. Transfer the procurement process to the three territories. (Larry Basich, lawrence. basich@fema.gov)

19. Continue implementation of 5-Year Map Review/Update Process and make it an integral part of the Flood Insurance Study procurement process. Ensure close regional and State involvement. (Cindy Croxdale, cindy.croxdale@ fema.gov)

20. Develop improved systems for monitoring contracted Flood Insurance Studies. Implement Monitoring Insurance Contracted Studies (MICS) software. (Eric Berman, eric.berman@fema.gov)

21. Revise FEMA 37, "Guidelines and Specifications for Study Contractors" and implement for Flood Insurance Studies starting in FY 2000, or partially implement in FY 1999. (Phil Myers, phil.myers @fema.gov)

22. Revise "Guidelines and Specifications for Technical Evaluation Contractors" and develop statement of work and request for proposal for re-procuring Technical Evaluation Contracts to begin in FY 2000. (Alan Johnson)

23. Oversee all aspects of awarding new Technical Evaluation Contracts to begin in FY 2000. (Cindy Croxdale)

24. Oversee all aspects of award and implementation of new Map Service Center contract to begin in FY 1999. (Kathy Miller, kathy.miller @fema.gov)

25. Respond to National Research Council report on alluvial fans. (Mike Grimm)

26. Initiate regulatory reform at 44CFR, Part 65.5. (Alan Johnson)

27. Complete riverine erosion study required by National Flood Insurance Reform Act of 1994. (Mike Grimm)

28. Complete coastal erosion studies required by National Flood Insurance Reform Act of 1994. (Mark Crowell)

*"**Objectives,**" Continued on Page 8*

SCORECARD

Last Updated May 1999

OBJECTIVE	COMPLETED ITEMS
1. Develop and implement marketing plan.	***Work In Progress*** bimonthly map modernization bulletin-inaugural issue published September 9, 1998. ***Work In Progress*** on the Web January 1999. (www.fema.gov/mit/tsd/mm_main.htm) Storyboards depicting Chronology of Flood Mapping Products from 1968 to the Future displayed at FEMA Headquarters. Display highlighting major components/ benefits of map modernization developed for travel to conferences and Project Impact events.
2. Develop and implement revised, minimum base map standards for hazard mapping.	Final draft for DFIRM 2.0 and 2.1 Base Map Specifications completed November 1998.
2.5. Complete assessment of advanced technologies for preparing topographic mapping and develop appendices to "Guidelines and Specifications for Study Contractors."	Draft on LIDAR specifications completed and reviewed January 1999. Appendix 4B completed and on the Web April 1999. (www.fema.gov/mit/tsd/MM_lidar.htm)
6. Initiate pilot Cooperating Technical Communities Program.	Ongoing discussions with CTCs.
8. Develop standards and procedures for mapping future-conditions' hydrology.	First draft of Future-Conditions Hydrology report completed December 1998. Key Constituencies identified, group recommendations developed March 1999. Revised draft report April/May 1999.
9. Develop Technical Services Division's Web site.	Web Architecture completed. Site launched February 1999. (www.fema.gov/mit/tsd)
12. Establish partnership with Fish and Wildlife Service to improve mapping of Coastal Barrier Resource System (CBRS) areas.	CBRS Community database on FIA/ NFIP Web site. Dare County, North Carolina, pilot mapping project completed and a finished map set provided to the NC Congressional delegation. Monthly cooperation meetings between FEMA and U.S. Fish and Wildlife Service held.

*"**Scorecard**," Continued on Page 8*

*"**Scorecard**," Continued from Page 7*

SCORECARD

OBJECTIVE	COMPLETED ITEMS
14. Bring the toll-free FEMA Map Assistance Center on line.	☑ Nationwide launch completed December 1998.
17. Develop new study processes and begin limited implementation in FY98, with at least one pilot in each territory.	☑ Presented draft recommendations at Engineers' Conference in Emmitsburg, Md., October 1998. ☑ Final report with recommendations to Mike Buckley December 31, 1998. ☑ Q-&-A session on final report April 1, 1999.
18. Fully implement multi-year contracts and task ordered contracts for procuring FISs. Transfer the procurement process to the three territories.	☑ Report with recommendations completed November 1998.
19. Continue implementation of Five-Year Map Review/Update Process.	☑ Contacted 100 percent of mapped communities participating in the NFIP. ☑ Sent thank-you letters to all responding communities. ☑ Entered data in MNUSS for all responses received.
22. Revise *Guidelines and Specifications for Flood Map Production Coordination Contractors* and develop Statement of Work and Request for Proposal for re-procuring Flood Map Production Coordination Contractor services to begin in FY2000.	☑ Guidelines revised and on the Web February 1999. (www.fema.gov/mit/tsd/frmguide.htm)
24. Oversee all aspects of new Map Service Center contract to begin FY99.	☑ Contract awarded October 30, 1998. (www.fema.gov/msc)
27. Complete riverine erosion study required by NFIRA.	☑ First draft of Riverine Erosion Hazard Area report completed and mailed to Project Working Group (PWG) for review and comment.
32. Enter into Memorandum of Understanding with U.S. Department of Defense to allow FEMA to use the PPS code in GPS.	☑ Signed and approved Memorandum of Agreement November 1998.
37. Identify and compile FEMA's regulations and laws and recommend changes to FEMA's Map Modernization Plan.	☑ Currently collecting new or revised data on Objective 17, a key linkage to Objective 37. ☑ Ongoing coordination with regional staff.

*"**Objectives,**" Continued from Page 7*

29. Continue maintenance level research on coastal erosion rate analysis and shoreline location forecasting. (Mark Crowell)

30. Participate as a member of the Community Rating System task force. (Alan Johnson)

31. Finalize "Guidelines and Specifications for Wave Height Studies," Volumes 1 and 2. (Doug Bellomo)

32. ☑ Participate as a National Coordinator in the Federal Civilian Agency Precise Positioning Service (PPS) Committee; enter into a Memorandum of Understanding with the Department of Defense to allow FEMA to use the PPS code in Global Positioning System units to enable more efficient spatial data collection; and organize the internal infrastructure necessary within FEMA to allow the regions to fully utilize this technology in program activities. (Erik Rourke, erik.rourke@fema.gov)

33. Revise and republish "Appeals, Revisions, and Amendments to NFIP Maps: A Guide for Community Officials," FIA 12. Include linkages to Cooperating Technical Communities program. (Eugene Zeizel, eugene.zeizel@fema.gov)

34. Represent FEMA at preparation meetings shaping the worldwide "Year of the Ocean" initiative being endorsed by the United Nations to promote and provide information and education regarding the impact of the ocean, seas, and coastal waters on everyday life. (Doug Bellomo)

35. Improve the Letter of Map Revision process by developing technical and administrative enclosures which succinctly describe map changes and community responsibilities as a result of Letters of Map Revision. (Doug Bellomo)

36. (removed)

37. ☑ Identify and compile FEMA's regulations and laws and recommend changes to remove or minimize impediments to FEMA's Map Modernization Plan. (Cecelia Lynch, cecelia.lynch@fema.gov)

*"**Future-Conditions Hydrology**," continued from page 3*

The recommendations take into account the benefits and constraints of using future-conditions data. Examples of these benefits and constraints include:

Benefits

- FEMA's continued support for progressive communities in their use of stricter floodplain management regulations and in the use of locally developed data.
- More informed decisions could be made on where to locate structures near the floodplain, i.e., discouraging their placement in the future-conditions floodplain, an area that may eventually be in the 1-percent-annual-chance floodplain.
- The determination and utilization of future land-use conditions at the local level could provide better opportunities for increasing partnerships between FEMA and the communities.
- Future damage to structures and loss of life may be reduced because increased flood hazard areas would be shown and less development would be permitted in those areas.

Constraints

- The possibility that a rational and reasonable link between the public health and safety and the resulting land-use regulations and flood insurance rates may not exist. This could result in objections from property owners to land-use regulations and flood insurance rates based on conditions not currently existing.
- Greater uncertainty in predicting future land-use conditions and the associated 1-percent-annual-chance elevation, floodplain and floodway may make the regulatory data based on future-conditions more subject to challenge.
- Methods used to determine future-conditions discharges will likely differ between communities, resulting in less consistency and uniformity nationwide.
- The perception that the Federal government is seeking more restrictions on land-use regulations and infringing on land development could increase resistance to the NFIP.

The draft report includes recommendations for implementation, such as developing procedures for displaying future-conditions floodplains on digital map products like DFIRMs, incorporating future-conditions hydrology into Cooperating Technical Communities agreements and modifying NFIP regulations as required.

A revised draft report was distributed recently for further review to the previous group and to additional key constituencies. We expect to implement the final findings and recommendations during Fiscal Year 1999.

Mike Grimm (michael.grimm@fema.gov) *is a Hydraulic Engineer in the Hazards Study Branch of the Technical Services Division.*

Sally Magee (sally.magee@fema.gov) *is a Civil Engineer in the Hazards Study Branch of the Technical Services Division.*

FEMA Announces Changes in User Fees

To fully recover the funds expended for reviewing Letter of Map Revision (LOMR), Physical Map Revision (PMR) and Conditional Letter of Map Revision (CLOMR) requests, FEMA has adopted a new fee schedule. The new fee schedule (see table below) became effective on March 1, 1999.

Fee Schedule for Conditional Letter of Map Revision Requests	
Request based on new hydrology, bridge, culvert, channel, or combination thereof	**$3,100**
Request based on levee, berm, or other structure	**$4,000**
Fee Schedule for Letter of Map Revision and Physical Map Revision Requests	
Request based on bridge, culvert, channel, or combination thereof	**$4,000**
Request based on levee, berm, or other structure	**$4,700**
Request based on as-built information submitted as a follow-up to CLOMR	**$3,400**
Request based solely on submission of more detailed data	**$3,100**

FEMA has maintained $5,000 as the initial fee for LOMRs and CLOMRs based on structural measures on alluvial fans. FEMA will continue to recover the remainder of the review and processing costs by invoicing the requester before issuing a determination letter, consistent with current practice. The prevailing private-sector labor rate charged by FEMA ($50 per hour) shall continue to be used to calculate the total reimbursable fees.

For more information on map revisions, visit www.fema.gov/mit/tsd/fq_main.htm.

*"**Five-Year Mapping Needs**," continued from page 1*

FEMA thanks responding communities

The Task Force has mailed thank you letters to all the responding communities, with the most recent letters mailed during March 1999. In addition to expressing FEMA's appreciation for the response, the letters also informed community officials that mapping needs can be submitted at any time, and requested that community officials keep FEMA informed of mapping needs as they arise.

Follow-up on nonresponding communities

The Task Force is pursuing a variety of approaches for following up with the communities that had not responded as of April 15, 1999, in an effort to get a more complete listing of mapping needs for the entire United States. For some FEMA Regions, such as Region X, follow-up letters are being sent to the nonresponding communities; for others, Regional Office staff are providing lists of the nonresponding communities to the NFIP State Coordinators. In addition, some Regional Office staff are bringing up the issue during Community Assistance Visits and other meetings with community representatives.

Revisions to rankings provided by MNUSS in progress

As a result of a series of meetings and teleconferences held during the last part of 1998 and the first part of 1999, the Task Force is undertaking revisions to the MNUSS database. The new and improved version of MNUSS, which will include more information than was previously collected by the Task Force, will provide rankings and costs that are based on communities' total mapping needs rather than on the individual mapping needs identified by the communities. The new and improved MNUSS should prove to be even more valuable as a tool that FEMA staff can use to rank and prioritize mapping updates nationwide.

Cindy Croxdale (cindy.croxdale@fema.gov) *is a Hydraulic Engineer in the Mapping Support Branch of the Technical Services Division.*

FEMA Publishes Appendix for Airborne LIDAR Systems

As part of its Map Modernization Plan, FEMA has completed Appendix 4B of the *Flood Insurance Study Guidelines and Specifications for Study Contractors*. Appendix 4B, completed in April, presents the guidelines and specifications that must be used for the application of Airborne LIght Detection And Ranging (LIDAR) systems for gathering the necessary data to create digital elevation models, digital terrain maps and other National Flood Insurance Program products. As defined in the Appendix, LIDAR systems are airborne laser systems flown aboard rotary or fixed-wing aircraft and are used to acquire x, y and z coordinates of manmade and naturally occurring terrain and terrain features.

You may obtain more information, or download a copy of the document, at http://www.fema.gov/mit/tsd/MM_lidar.htm. Interested parties are encouraged to provide written technical comments or suggestions regarding this Appendix via e-mail message to mapmod@fema.gov.

*"**Mike Armstrong's Message,**" continued from page 1*

The CTC program includes both unfunded and funded pilot projects. Some communities or agencies may have data or may already be performing analyses that FEMA can use for flood hazard mapping and, thus, would not receive funding but would be recognized for their efforts and contributions. However, FEMA has $400,000 available ($40,000 per Region) for FEMA-funded cooperative agreement activities in Fiscal Year 1999. The agreements for these activities will require that the partner provide FEMA with a "product," such as base maps, topographic data files, or flood models.

This new initiative is a natural match to Project Impact. The involvement of local entities throughout the floodplain mapping process is just the kind of cooperation that Project Impact seeks to foster, and I'm eager to see what fresh ideas come from the committed involvement of different levels of government.

— Mike Armstrong

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For more information on the CTC program, you may read ***Pilot CTC Activities for FY99*** in this issue.

Editor's note: Mike Buckley's column will return in the next issue of Work In Progress.

Work in Progress was produced with the valuable assistance of many individuals in the Mitigation Directorate and across FEMA who contribute to the success of the Map Modernization Plan.

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